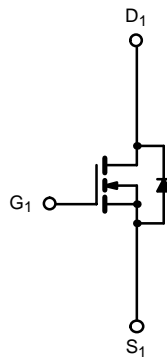
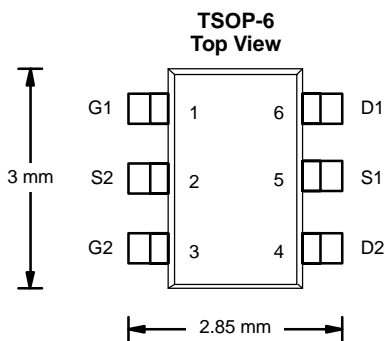




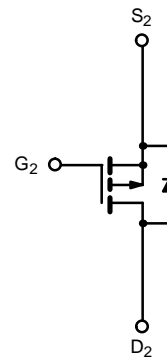
N- and P-Channel 20-V (D-S) MOSFET

PRODUCT SUMMARY			
	V_{DS} (V)	$r_{DS(on)}$ (Ω)	I_D (A)
N-Channel	20	0.125 @ $V_{GS} = 4.5$ V	2.4
		0.200 @ $V_{GS} = 2.5$ V	1.8
P-Channel	-20	0.200 @ $V_{GS} = -4.5$ V	-1.8
		0.340 @ $V_{GS} = -2.5$ V	-1.2

TrenchFET[®]
Power MOSFETS



N-Channel MOSFET



P-Channel MOSFET

ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)							
Parameter	Symbol	N-Channel		P-Channel		Unit	
		10 secs	Steady State	10 secs	Steady State		
Drain-Source Voltage	V_{DS}	20		-20		V	
Gate-Source Voltage	V_{GS}	± 12		± 12			
Continuous Drain Current ($T_J = 150^\circ\text{C}$) ^a	I_D	$T_A = 25^\circ\text{C}$	2.4	2.0	-1.8	-1.5	A
		$T_A = 70^\circ\text{C}$	1.7	1.4	-1.3	-1.2	
Pulsed Drain Current	I_{DM}	8		-7			
Continuous Source Current (Diode Conduction) ^a	I_S	1.05	0.75	-1.05	-0.75		
Maximum Power Dissipation ^a	P_D	$T_A = 25^\circ\text{C}$	1.15	0.83	1.15	0.83	W
		$T_A = 70^\circ\text{C}$	0.59	0.53	0.59	0.53	
Operating Junction and Storage Temperature Range	T_J, T_{stg}	-55 to 150				$^\circ\text{C}$	

THERMAL RESISTANCE RATINGS							
Parameter	Symbol	N-Channel		P-Channel		Unit	
		Typ	Max	Typ	Max		
Maximum Junction-to-Ambient ^a	R_{thJA}	$t \leq 10$ sec	93	110	93	110	$^\circ\text{C/W}$
		Steady State	130	150	130	150	
Maximum Junction-to-Foot (Drain)	R_{thJF}	75	90	75	90		

Notes

a. Surface Mounted on 1" x 1" FR4 Board.

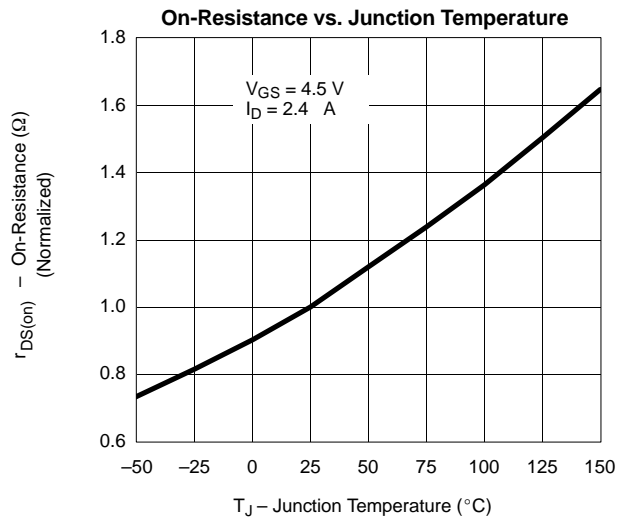
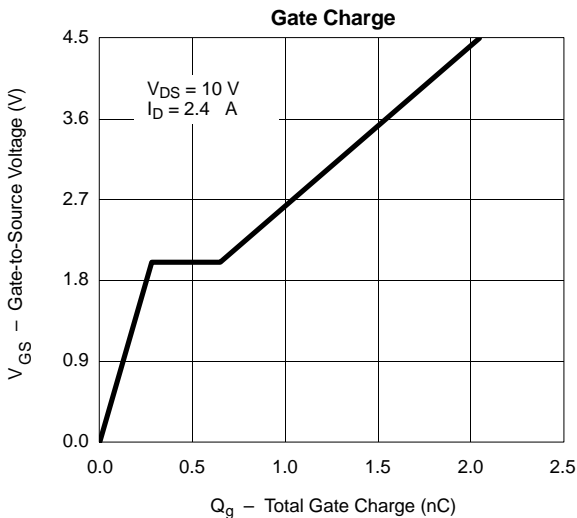
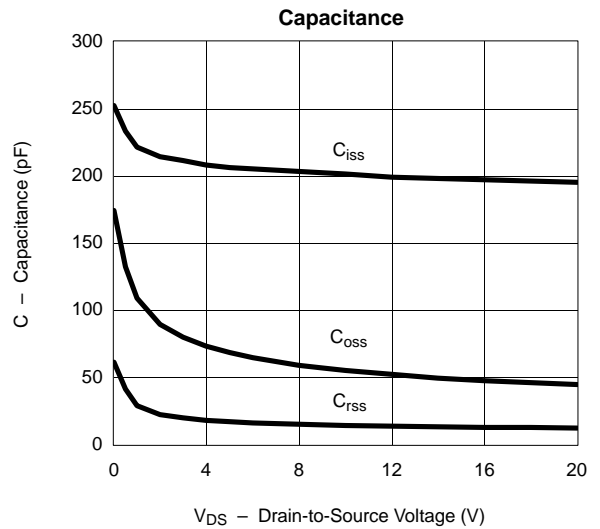
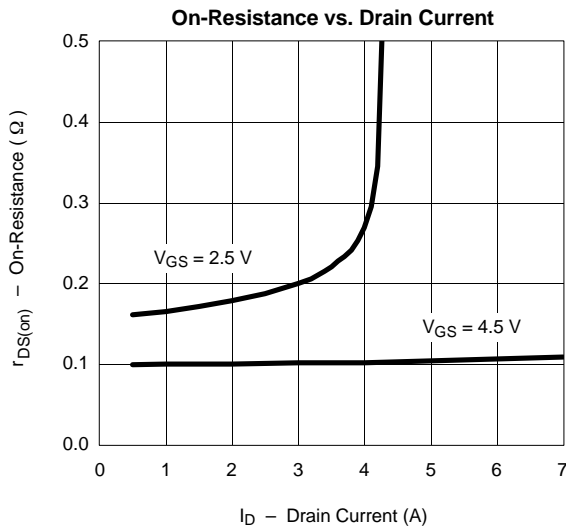
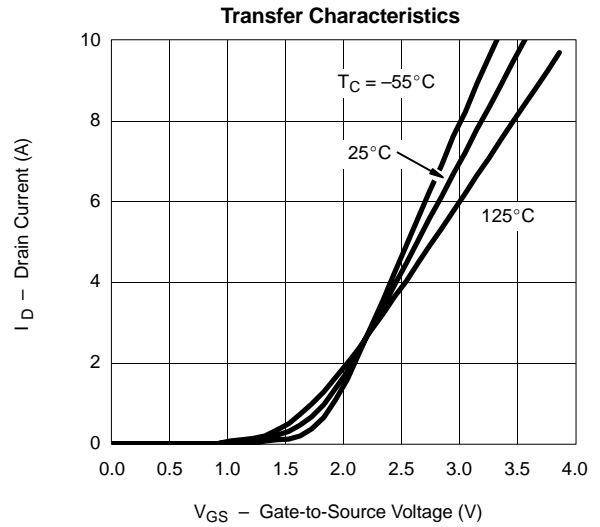
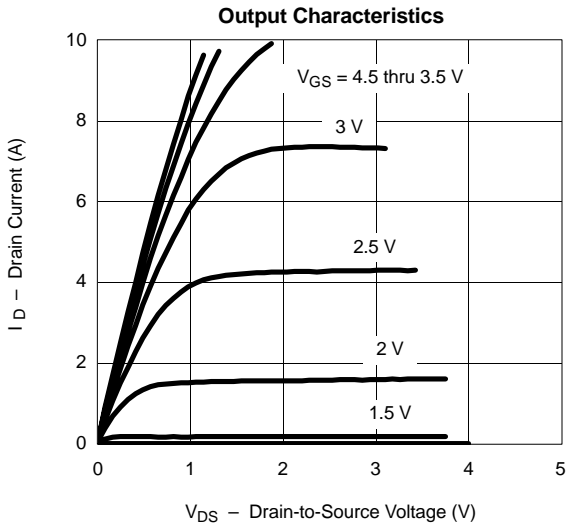
SPECIFICATIONS (T _J = 25 °C UNLESS OTHERWISE NOTED)							
Parameter	Symbol	Test Condition		Min	Typ	Max	Unit
Static							
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250 μA	N-Ch	0.6			V
		V _{DS} = V _{GS} , I _D = -250 μA	P-Ch	-0.5			
Gate-Body Leakage	I _{GSS}	V _{DS} = 0 V, V _{GS} = ±12 V	N-Ch			±100	nA
			P-Ch			±100	
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 16 V, V _{GS} = 0 V	N-Ch			1	μA
		V _{DS} = -16 V, V _{GS} = 0 V	P-Ch			-1	
		V _{DS} = 16 V, V _{GS} = 0 V, T _J = 55 °C	N-Ch			5	
		V _{DS} = -16 V, V _{GS} = 0 V, T _J = 55 °C	P-Ch			-5	
On-State Drain Current ^a	I _{D(on)}	V _{DS} ≥ 5 V, V _{GS} = 4.5 V	N-Ch	5			A
		V _{DS} ≤ -5 V, V _{GS} = -4.5 V	P-Ch	-5			
Drain-Source On-State Resistance ^a	r _{DS(on)}	V _{GS} = 4.5 V, I _D = 2.4 A	N-Ch		0.100	0.125	Ω
		V _{GS} = -4.5 V, I _D = -1.8 A	P-Ch		0.160	0.200	
		V _{GS} = 2.5 V, I _D = 1.8 A	N-Ch		0.160	0.200	
		V _{GS} = -2.5 V, I _D = -1.2 A	P-Ch		0.280	0.340	
Forward Transconductance ^a	g _{fs}	V _{DS} = 5 V, I _D = 2.4 A	N-Ch		5		S
		V _{DS} = -5 V, I _D = -1.8 A	P-Ch		3.6		
Diode Forward Voltage ^a	V _{SD}	I _S = 1.05 A, V _{GS} = 0 V	N-Ch		0.80	1.10	V
		I _S = -1.05 A, V _{GS} = 0 V	P-Ch		-0.83	-1.10	
Dynamic^b							
Total Gate Charge	Q _g	N-Channel V _{DS} = 10 V, V _{GS} = 4.5 V, I _D = 2.4 A P-Channel V _{DS} = -10 V, V _{GS} = -4.5 V, I _D = -1.8 A	N-Ch		2.1	3.2	nC
			P-Ch		2.7	4.0	
Gate-Source Charge	Q _{gs}		N-Ch		0.3		
			P-Ch		0.4		
Gate-Drain Charge	Q _{gd}		N-Ch		0.4		
			P-Ch		0.6		
Turn-On Delay Time	t _{d(on)}	N-Channel V _{DD} = 10 V, R _L = 10 Ω I _D ≅ 1 A, V _{GEN} = 4.5 V, R _G = 6 Ω P-Channel V _{DD} = -10 V, R _L = 10 Ω I _D ≅ -1 A, V _{GEN} = -4.5 V, R _G = 6 Ω	N-Ch		10	17	ns
			P-Ch		11	17	
Rise Time	t _r		N-Ch		30	50	
			P-Ch		34	50	
Turn-Off Delay Time	t _{d(off)}		N-Ch		14	25	
			P-Ch		19	30	
Fall Time	t _f		N-Ch		6	12	
			P-Ch		24	36	
Source-Drain Reverse Recovery Time	t _{rr}	I _F = 1.05 A, di/dt = 100 A/μs	N-Ch		30	50	
		I _F = -1.05 A, di/dt = 100 A/μs	P-Ch		20	40	

Notes

- a. Pulse test; pulse width ≤ 300 μs, duty cycle ≤ 2%.
b. Guaranteed by design, not subject to production testing.

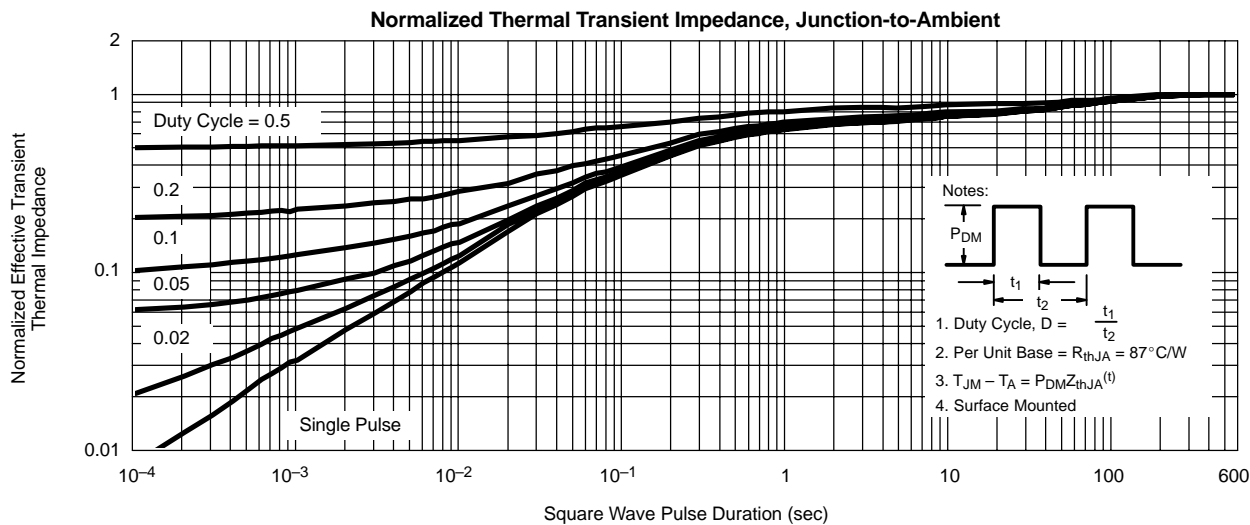
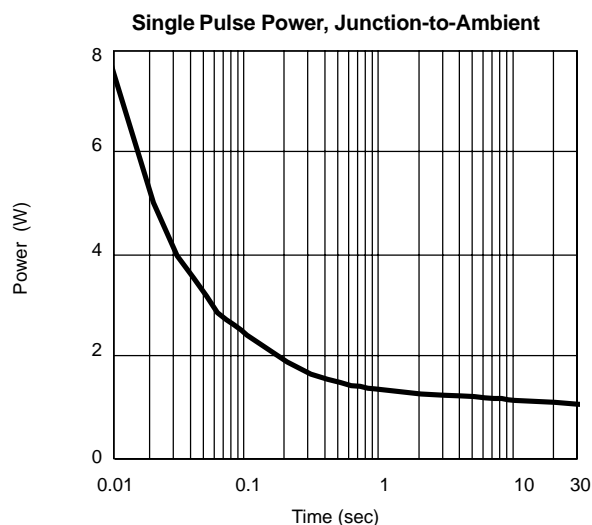
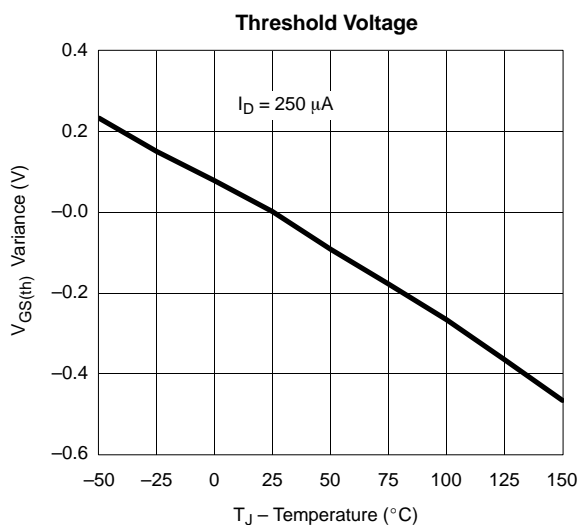
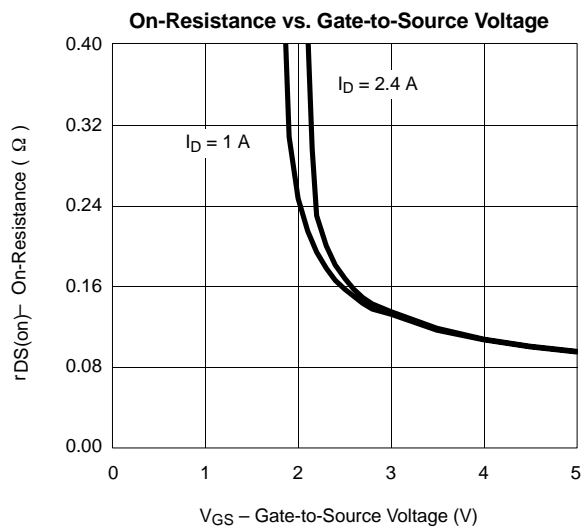
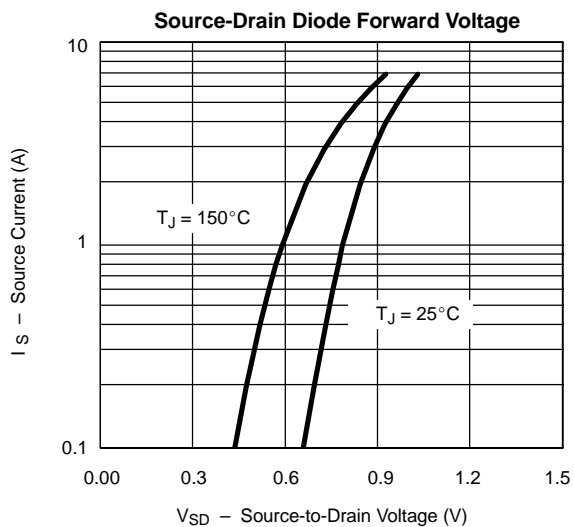


TYPICAL CHARACTERISTICS (25°C UNLESS NOTED) N-CHANNEL



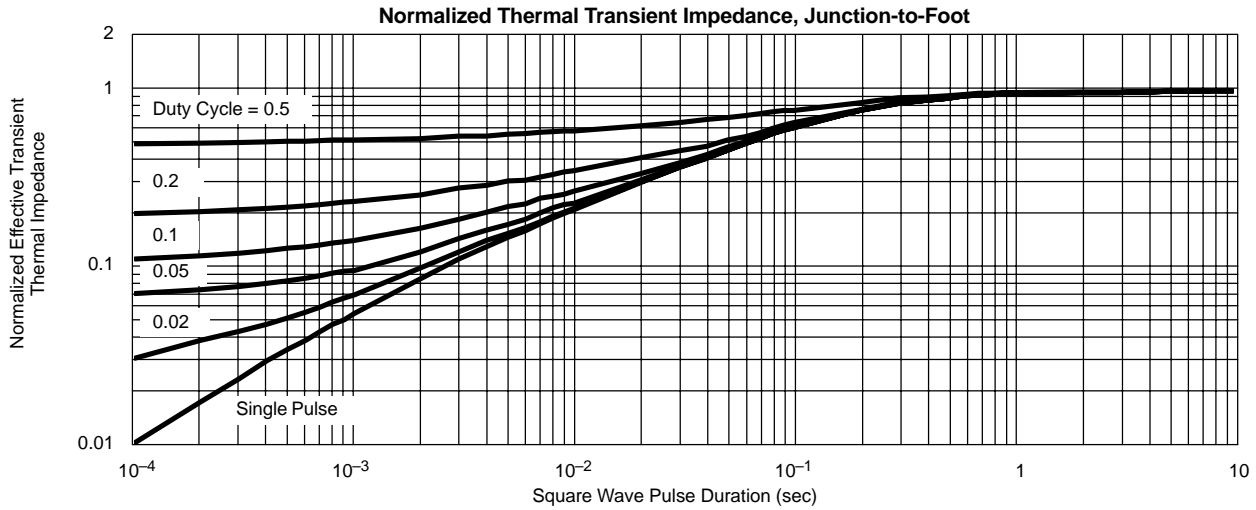
TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

N-CHANNEL

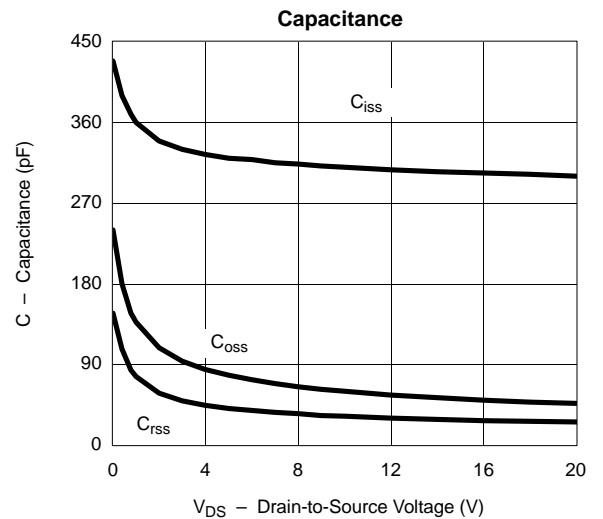
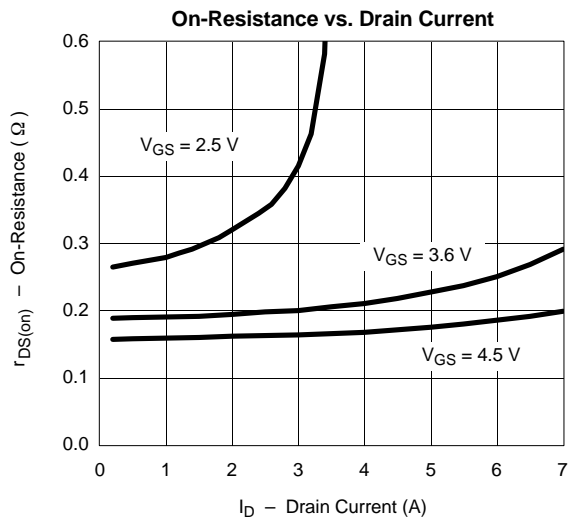
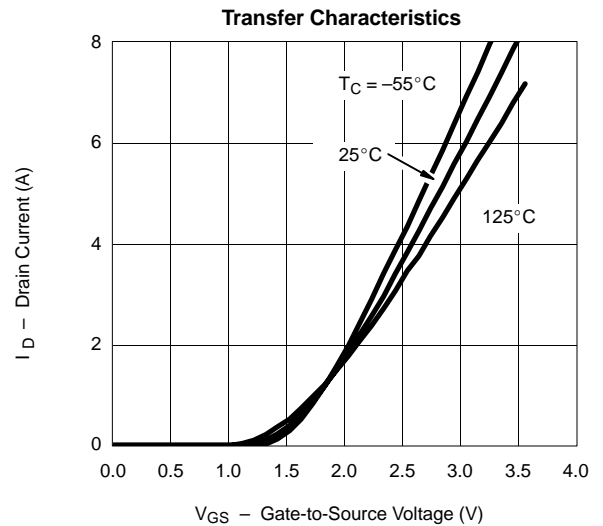
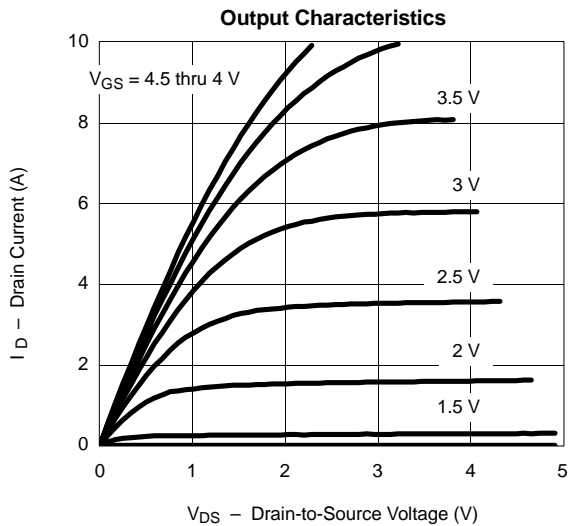




TYPICAL CHARACTERISTICS (25°C UNLESS NOTED) N-CHANNEL

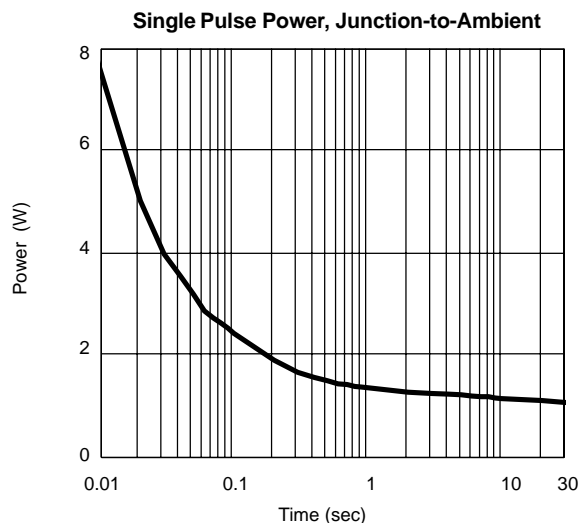
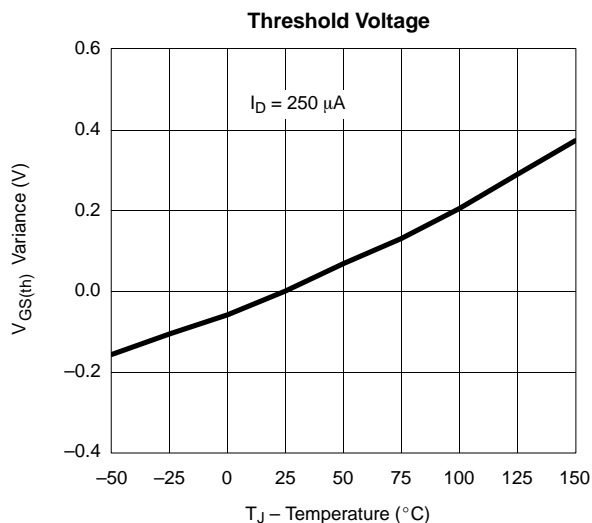
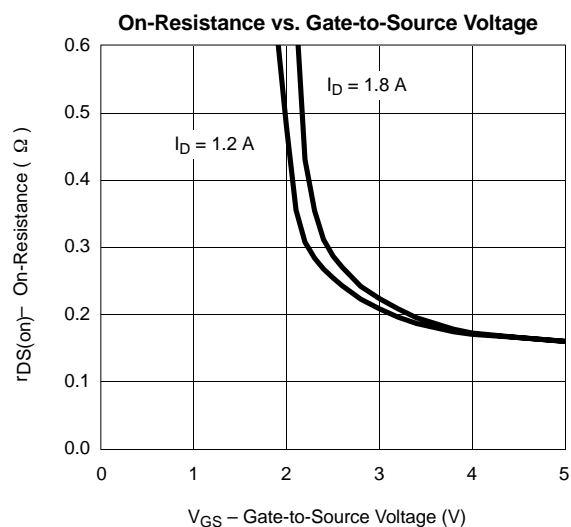
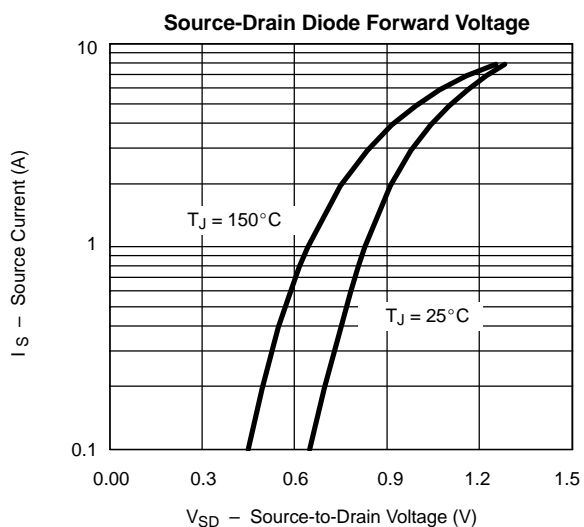
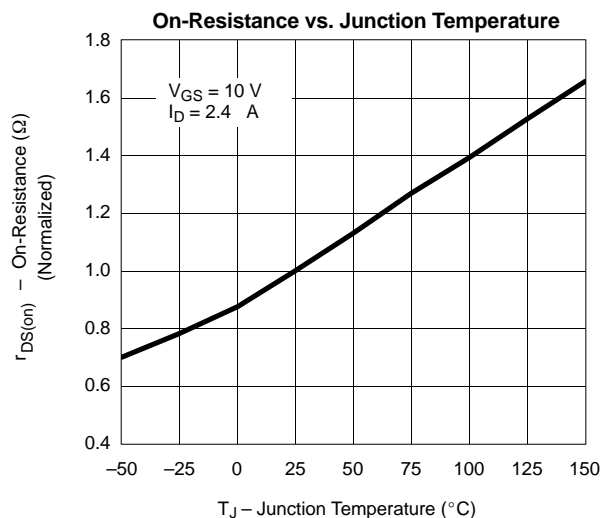
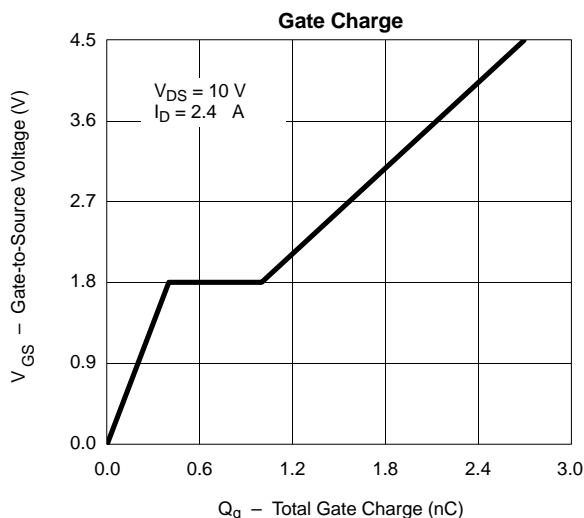


TYPICAL CHARACTERISTICS (25°C UNLESS NOTED) P-CHANNEL



TYPICAL CHARACTERISTICS (25 °C UNLESS NOTED)

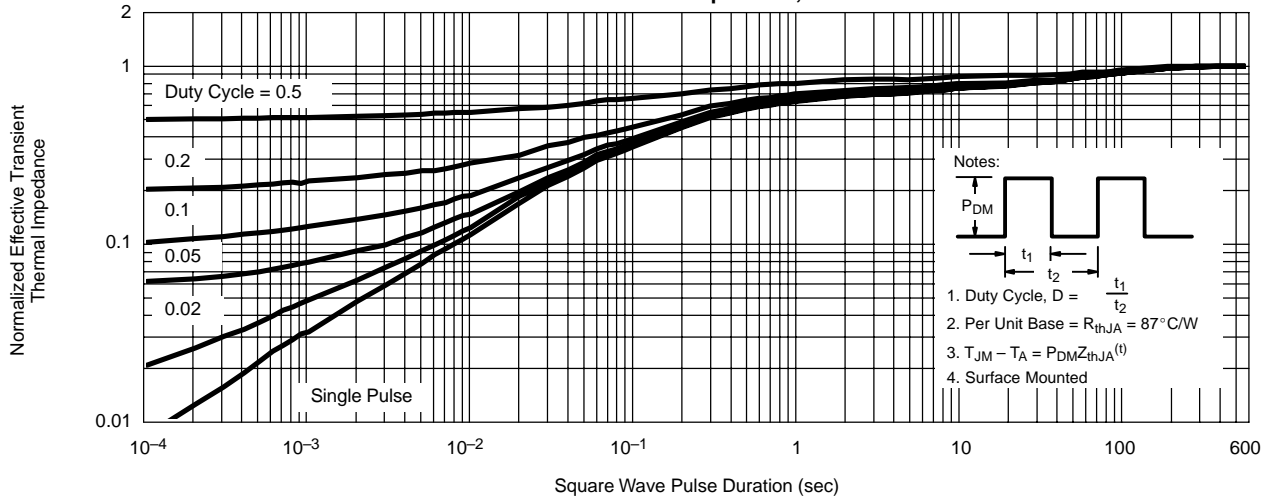
P-CHANNEL



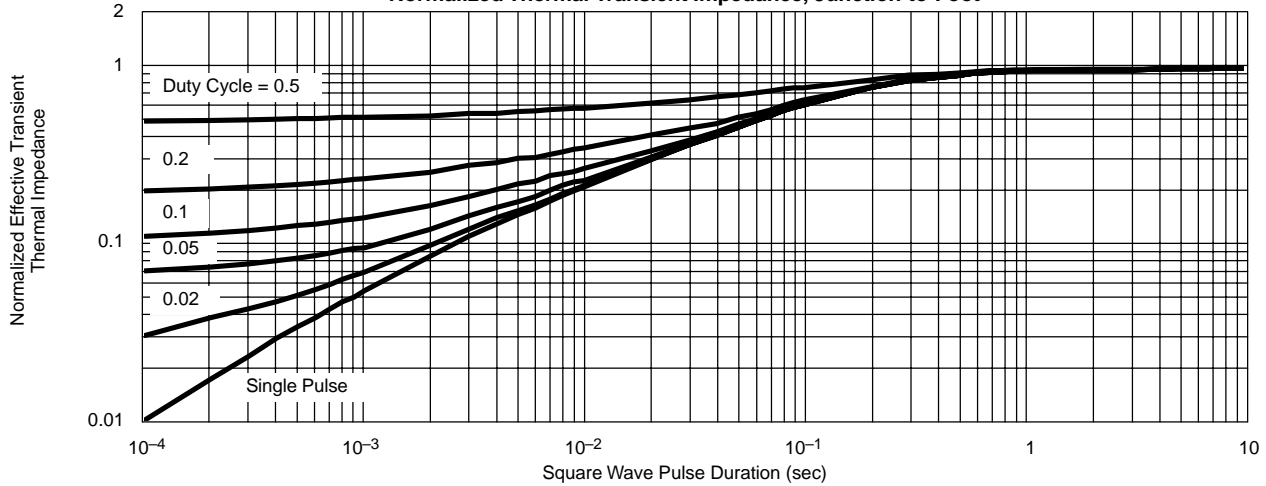


TYPICAL CHARACTERISTICS (25 °C UNLESS NOTED) P-CHANNEL

Normalized Thermal Transient Impedance, Junction-to-Ambient



Normalized Thermal Transient Impedance, Junction-to-Foot





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